



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,897	09/28/2001	Peter Kamvysselis	EMS-02002	3541
26339	7590	08/28/2006	EXAMINER	
MUIRHEAD AND SATURNELLI, LLC 200 FRIBERG PARKWAY, SUITE 1001 WESTBOROUGH, MA 01581			SHINGLES, KRISTIE D	
		ART UNIT	PAPER NUMBER	
			2141	

DATE MAILED: 08/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/965,897	KAMVYSELIS, PETER	
	Examiner Kristie Shingles	Art Unit 2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 June 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 63-103 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 63-103 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Per Applicant's Request for Continued Examination:
Claims 63, 71, 80, 81, 86, 94 and 103 have been amended.
Claims 1-62 and 104-108 have been cancelled.

Claims 63-103 are pending.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/13/2006 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 63, 71, 80, 81, 86, 94 and 103 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 63-81 and 86-103** are rejected under 35 U.S.C. 103(a) as being anticipated by *Chandra et al* (USPN 6,058,389) in view of *Nagy* (USPN 5,163,054) and further in view of *Rhee* (USPN 6,104,757).

a. **Per claim 63,** *Chandra et al* teach a method of sending data, comprising:

- obtaining a first predetermined value for a sequence number (col.3 lines 19-30, col.10 lines 46-59, col.14 lines 10-52, col.15 lines 23-55 and col.27 lines 10-65; values for sequencing are determined and specified using a priority code, state value or by a sequence deviation number according to the control information);
- obtaining blocks of data, wherein each of the blocks of data corresponds to a packet of data (col.6 lines 45-51 and col.12 lines 29-35; message units correspond to blocks of data);
- assigning the first predetermined value as the sequence number to each of the packets of data (col.10 lines 46-59, col.11 lines 3-9 and col.14 lines 10-65; the priority code, control information or sequence deviation parameter determines the sequencing of the messages in the queue); and
- in response to the sequence number becoming equal to a second predetermined value different from the first predetermined value, acknowledging receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to a destination (col.5 line 10-col.6 line 10, col.10 lines 15-26, col.14 lines 10-52, col.15 lines 18-33, col.16 lines 1-11, col.21 line 8-col.22 line 4 and col.27 lines 10-65; when state value reaches “EXPIRED” the message has been processed and received by the exception queue, a message is dequeued when its sequence number has reached a predetermined sequence value greater than the highest sequence number associated with the application and subsequently moved/archived to the Exception Queue).
- wherein packets of data associated with the same sequence number are sent to the destination in an order that is independent of an order in which the packets are obtained (col.8 lines 41-46 and col.10 lines 55-59; provision for obtaining

messages in a FIFO order, but then reordering the messages by the priority code).

Yet *Chandra et al* fail to explicitly teach assigning the first predetermined value as the sequence number to each of the packets of data, wherein at least two packets of data are assigned the same sequence number. However, *Nagy* teaches the assignment of the same sequence number to a frame, wherein before confirmation for altering the transmit toggle bit is issued each time the same sequence number is reused and a data frame must be confirmed before reusing a transmit sequence number (Abstract, col.2 lines 25-45, col.6 lines 41-61). Furthermore *Rhee* teaches that retransmitted packets are assigned the same sequence numbers as their original packets and acknowledgments corresponding to the received packets are returned from the receiver are returned (col.3 lines 8-23, col.15 lines 8-16). After receiving the acknowledgement, the retransmitted packets are sent to the destination in an order independent of the order in which it was received (col.3 lines 8-23, col.15 lines 17-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Chandra et al*, *Nagy* and *Rhee* for the purpose of allowing confirmation of receipt of a sequence number before reusing it and allowing retransmission packets to contain the same sequence number as their original packets; which effectively maintain packet organization between the queues and buffers of the sender and receiver by implementing by identifying the lost/missed packets needing retransmission and implementing acknowledgment receipts.

b. **Claim 86** contains limitations that are substantially equivalent to claim 63 and is therefore rejected under the same basis.

c. Per claim 64, *Chandra et al* teach the method of Claim 63, the method further comprising: prior to acknowledging, indicating to a first storage device a transfer ready signal; and sending said blocks of data to a second storage device (col.4 lines 49-63, col.14 lines 10-46, col.14 lines 23-36 and col.16 lines 6-11; state parameter indicates a “READY” value when the message is ready to be processed and after processing the value becomes “EXPIRED” and sent to a second storage place in the Exception Queue).

d. Claim 87 is substantially equivalent to claim 64 and is therefore rejected under the same basis.

e. Per claim 65, *Chandra et al* teach the method of Claim 64, wherein said acknowledging is performed prior to providing said blocks of data to said second storage device (col.15 lines 34-64 and col.16 lines 6-60; provision for indicative parameters and notification process before messages leave the queue for another location).

f. Claim 88 is substantially equivalent to claim 65 and is therefore rejected under the same basis.

g. Per claim 66, *Chandra et al* teach the method of Claim 63, wherein the second predetermined value is a number that is one greater than the first predetermined value (col.21 line 14-col.22 line 4, col.25 line 56-col.27 line 65 and col.28 lines 1-15; incrementing to a higher value).

h. Claim 89 is substantially equivalent to claim 66 and is therefore rejected under the same basis.

i. Per claim 67, *Chandra et al* teach the method of Claim 63, farther comprising: in response to the sequence number becoming equal to the second predetermined value, providing a

value to each of the packets corresponding to a total number of packets of data that are assigned the first predetermined value as the sequence number (**col.10 lines 38-40, col.18 lines 37-48, col.21 line 8-col.22 line 4 and col.25 line 56-col.27 line 65**).

j. **Claim 90** is substantially equivalent to claim 67 and is therefore rejected under the same basis.

k. **Per claim 68,** *Chandra et al* teach the method of Claim 63, further comprising: incrementing the sequence number periodically (**col.13 line 49-col.14 line 6, col.20 line 40-col.21 line 7 and col.22 lines 1-4; sequence numbers are incremented and decremented according to the insertions and deletions in the queue**).

l. **Claim 91** is substantially equivalent to claim 68 and is therefore rejected under the same basis.

m. **Per claim 69,** *Chandra et al* teach the method of Claim 68, wherein incrementing the sequence number periodically includes incrementing the sequence number according to an amount of time between a first block of data being provided and a second block of data being prodded, wherein the second block of data being provided depends upon the first block of data being provided (**col.24 line 55-col.26 line 66 and col.28 lines 16-col.29 line 54**).

n. **Claim 92** is substantially equivalent to claim 69 and is therefore rejected under the same basis.

o. **Per claim 70,** *Chandra et al* teach the method of Claim 63, further comprising: prior to sending the packets of data, storing the data in a journal (**col.2 lines 52-60, col.4 lines 49-63, col.6 lines 12-44, col.6 line 64-col.7 line 3, col.10 lines 38-40, col.15 lines 39-44 and**

col.35 lines 1-26; provision for cache and storage prior to transmitting/transferring messages).

p. **Claim 93** is substantially equivalent to claim 70 and is therefore rejected under the same basis.

q. **Per claim 71**, *Chandra et al* teach the method of receiving data, comprising:

- accumulating received packets of data having a sequence number equal to a first predetermined value (col.3 lines 19-30, col.10 lines 46-59, col.14 lines 10-52, col.15 lines 23-55 and col.27 lines 10-65; values for sequencing are determined and specified using a priority code, state value or by a sequence deviation number according to the control information);
- obtaining a first indication that the sequence number equals the first predetermined value (col.10 lines 46-59, col.11 lines 3-9, col.14 lines 10-65, col.15 lines 34-64 and col.16 lines 6-60; provision for indicative parameters and notification process before messages leave the queue for another location—the priority code, control information or sequence deviation parameter determines the sequencing of the messages in the queue);
- obtaining a second indication that the sequence number equals a second predetermined value different from the first predetermined value (col.4 lines 49-63, col.14 lines 10-46, col.14 lines 23-36 and col.16 lines 6-11; state parameter indicates a “READY” value when the message is ready to be processed and after processing the value becomes “EXPIRED” and sent to a second storage place in the Exception Queue); and
- in response to obtaining the second indication, transferring data corresponding to packets of data having the sequence number equal to the first predetermined value to a receiving device (col.5 line 33-col.6 line 10, col.10 lines 15-26, col.14 lines 10-52, co.15 lines 18-33, col.16 lines 1-11, col.21 line 8-col.22 line 4 and col.27 lines 10-65; when state value reaches “EXPIRED” the message has been processed and received by the exception queue, a message is dequeued when its sequence number has reached a predetermined sequence value greater than the highest sequence number associated with the application and subsequently moved/archived to the Exception Queue).
- wherein packets of data associated with the same sequence number are transferred to the receiving device in an order that is independent of an order in which the packets are accumulated (col.8 lines 41-46 and col.10 lines 55-59; provision for

obtaining messages in a FIFO order, but then reordering the messages by the priority code).

Yet *Chandra et al* fail to explicitly teach assigning the first predetermined value as the sequence number to each of the packets of data, wherein at least two packets of data are assigned the same sequence number. However, *Nagy* teaches the assignment of the same sequence number to a frame, wherein before confirmation for altering the transmit toggle bit is issued each time the same sequence number is reused and a data frame must be confirmed before reusing a transmit sequence number (Abstract, col.2 lines 25-45, col.6 lines 41-61). Furthermore *Rhee* teaches that retransmitted packets are assigned the same sequence numbers as their original packets and acknowledgments corresponding to the received packets are returned from the receiver are returned (col.3 lines 8-23, col.15 lines 8-16). After receiving the acknowledgement, the retransmitted packets are sent to the destination in an order independent of the order in which it was received (col.3 lines 8-23, col.15 lines 17-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Chandra et al*, *Nagy* and *Rhee* for the purpose of allowing confirmation of receipt of a sequence number before reusing it and allowing retransmission packets to contain the same sequence number as their original packets; which effectively maintain packet organization between the queues and buffers of the sender and receiver by implementing by identifying the lost/missed packets needing retransmission and implementing acknowledgment receipts.

r. **Claim 94** contains limitations that are substantially equivalent to claim 71 and is therefore rejected under the same basis.

s. **Per claim 72,** *Chandra et al* teach the method of Claim 71, further comprising: following obtaining the first indication, initiating a transfer command to the receiving device (**col.4 lines 49-63, col.14 lines 10-46, col.14 lines 23-36 and col.16 lines 6-11; state parameter indicates a “READY” value when the message is ready to be processed and after processing the value becomes “EXPIRED” and sent to a second storage place in the Exception Queue**).

t. **Claims 74, 95 and 97** are substantially similar to claim 72 and are therefore rejected under the same basis.

u. **Per claim 73,** *Chandra et al* teach the method of Claim 72, wherein data is not transferred to the receiving device until the receiving device acknowledges initiation of data transfer in response to the transfer command being initiated (**col.15 lines 34-64 and col.16 lines 6-60; provision for indicative parameters and notification process before messages leave the queue for another location**).

v. **Claims 75, 96 and 98** are substantially equivalent to claim 73 and are therefore rejected under the same basis.

w. **Per claim 76,** *Chandra et al* teach the method of Claim 71, wherein the second predetermined value is a number that is one greater than the first predetermined value (**col.21 line 14-col.22 line 4, col.25 line 56-col.27 line 65 and col.28 lines 1-15; incrementing to a higher value**).

x. **Claim 99** is substantially equivalent to claim 76 and is therefore rejected under the same basis.

y. **Per claim 77,** *Chandra et al* teach the method of Claim 71, farther comprising: incrementing the sequence number periodically (**col.13 line 49-col.14 line 6, col.20 line 40-**

col.21 line 7 and col.22 lines 1-4; sequence numbers are incremented and decremented according to the insertions and deletions in the queue).

z. **Claim 100** is substantially equivalent to claim 77 and is therefore rejected under the same basis.

aa. **Per claim 78,** *Chandra et al* teach the method of Claim 77, wherein incrementing the sequence number periodically includes incrementing the sequence number according to an amount of time between a first packet of data being provided and a second packet of data being provided, wherein the second packet of data being provided depends upon the first packet of data being provided (**col.24 line 55-col.26 line 66 and col.28 lines 16-col.29 line 54**).

bb. **Claim 101** is substantially equivalent to claim 78 and is therefore rejected under the same basis.

cc. **Per claim 79,** *Chandra et al* teach the method of Claim 71, further comprising: prior to transferring the data, storing the data in a journal (**col.2 lines 52-60, col.4 lines 49-63, col.6 lines 12-44, col.6 line 64-col.7 line 3, col.10 lines 38-40, col.15 lines 39-44 and col.35 lines 1-26; provision for cache and storage prior to transmitting/transferring messages**).

dd. **Claim 102** is substantially equivalent to claim 79 and is therefore rejected under the same basis.

ee. **Claims 80, 81 and 103** contain limitations substantially equivalent to claims 63 and 71 and are therefore rejected under the same basis.

Art Unit: 2141

5. **Claims 82-85** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Chandra et al* (USPN 6,058,389), *Nagy* (USPN 5,163,054) and *Rhee* (USPN 6,104,757) and further in view of *Talluri et al* (USPN 6,014,710).

a. **Per claim 82,** *Chandra et al*, *Nagy* and *Rhee* teach the computer system of claim 81 as applied above, yet fail to explicitly teach the computer system of Claim 81, wherein said first WAN blade is one of a first set of WAN blades, said second WAN blade is one of second set of WAN blades, said first device is included in a first consistency group of a plurality of storage devices, and said second device is included in a second consistency group of a plurality of storage devices. However, *Talluri et al* disclose storage nodes of a network with virtual and physical addresses for mapping data among the storage devices (**col.1 line 60-col.2 line 55, col.8 lines 15-55 and col.10 line 49-col.11 line 27**).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Chandra et al*, *Nagy* and *Rhee* with *Talluri et al* for the purpose of providing access to data within a plurality of storage device operable over WAN; because it would allow distributed data buffering and archiving as well as transmission of the data over the Internet framework.

b. **Claims 83-85** are substantially similar to claim 82 and are therefore rejected under the same basis.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: DiNicola et al (5,394,524), Nagai et al (5,291,483), Armstrong (6,618,828), Hirayama et al (5,832,201), Edmaier et al (5,561,661), Twitty et al (4,955,018).

Art Unit: 2141

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
Art Unit 2141

kds



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER